STATE OF CALIFORNIA

AUTOMATIC DAYLIGHTING CONTROL ACCEPTANCE DOCUMENT

CEC-NRCA-LTI-03-A (Revised 01/19) CALIFORNIA ENERGY COMMISSION

CERTIFICATE OF ACCEPTANCE		NRCA-LTI-03-A
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Project Name:	Enforcement Agency:	Permit Number:
Project Address:	City:	Zip Code:

Compliance Results: **[COMPLIES *or* DOES NOT COMPLY]**	Enforcement Agency Use: Checked by/Date

Intent:	This document is used to demonstrate compliance with acceptance requirements in §130.4(a)3 and Reference Nonresidential Appendix NA7.6.1 for automatic daylighting controls. Attach additional sets of pages 2 through 5, as required, for all controls that must be tested.

Indicate all control methods used for this project:	
☐	Continuous dimming controls *(Sections A and B-1 of this document should be completed)*
☐	Stepped switching / stepped dimming controls *(Sections A and B-2 of this document should be completed)*

A. Construction Inspection (NA7.6.1.1)		
☐	a.	The general lighting in skylit and primary sidelit daylit zones, or the general lighting in the combined primary and secondary sidelit daylit zones in parking garages, is controlled by automatic daylighting controls. (§130.1(d))
☐	b.	The daylit zones are shown on page(s) _____ of plans; ***OR*** The daylit zones are drawn in on page(s) _____ of as-built plans (attached). (§130.1(d)1)
☐	c.	The automatic daylighting controls provide separate control for luminaires in each type of daylit zone. Luminaires that fall in both a skylit and primary sidelit daylit zone are controlled as part of the skylit zone. (§130.1(d)2)
☐	d.	For photosensors located within a daylit zone, at least one photosensor is not readily accessible to unauthorized personnel. (§130.1(d)4)
☐	e.	The location where calibration adjustments are made to the automatic daylighting controls is readily accessible to authorized personnel, including inside a locked case or under a cover that requires a tool for access. (§130.1(d)5)
Construction Inspection Compliance: ◯ Complies ◯ Does Not Comply		

B-1. Continuous Dimming Control Systems Functional Testing (NA7.6.1.2.1)			
Building:	Floor:	Room:	Control:

☐	Control is representative of sample. (NA7.6.1.2) If sampling method is used, attach a page listing untested controls in sample.	
Step 1: Identify the reference location (the minimum daylighting location in the controlled zone). (NA7.6.1.2.1(a)) For parking garages, illuminance levels should be measured at the farthest edge of the secondary sidelit zone away from the glazing or opening. (§130.1(d)3D)		
a.	Specify the power estimation method used to be used: default ratio of power to light (**Dfc**), cut sheet ratio of power to light (**CSfc**) – cut sheet must be attached, measured Amps multiplied by Volts (**VA**), or measured watts (**W**).	
Step 2: No daylight test. Simulate or provide conditions without daylight. (NA7.6.1.2.1(d))		
b.	Indicate the method used to simulate or provide conditions without daylight: night time manual measurement (**Night**), night time illuminance logging (**Log**), cover fenestration (**CF**), or cover photosensor (**CP**).	
c.	Enter the reference illuminance value in footcandles (fc), as measured at the reference location. (NA7.6.1.2.1(d)2) This is the electric lighting illuminance without any daylight.	
d.	Enter the measured full load power in Volt-Amps (VA) if power estimation method (line a) = VA or in watts (W) if power estimation method = W. ***OR*** Indicate not applicable (**N/A**) if power estimation method (line a) = Dfc or CSfc.	
e.	Automatic daylight control system provides appropriate control so that the electric lighting system is providing full light output unless otherwise specified by design documents. (NA7.6.1.2.1(d)1) Enter yes (**Y**) or no (**N**).	
f.	Light output is stable with no discernable flicker. (NA7.6.1.2.1(d)3) Enter yes (**Y**) or no (**N**).	
Step 3: Full daylight test. Simulate or provide bright conditions where the daylight illuminance is greater than 150% of the reference illuminance measured in Step 2. (NA7.6.1.2.1(e), §130.1(d)3C, §130.1(d)3D)		
g.	Enter the daylight illuminance (light level with the electric lighting turned off) value in footcandles (fc) measured at the reference location.	
h.	Calculate the ratio of daylight illuminance to the reference illuminance in %. ([line g / line c] x 100)	
i.	The ratio of daylight illuminance to the reference illuminance (line h) is greater than 150%. (§130.1(d)3C, §130.1(d)3D) Enter yes (**Y**) or no (**N**).	
j.	Enter the total illuminance (combined daylight and electric light illuminance) in footcandles (fc) measured at the reference location if power estimation method (line a) = Dfc or CSfc. ***OR*** Enter the measured power in Volt-Amps (VA) if power estimation method (line a) = VA, or in watts (W) if power estimation method (line a) = W.	
k.	Calculate the electric lighting illuminance in footcandles (fc) at the reference location if power estimation method (line a) = Dfc or CSfc. (line j – line g) ***OR*** indicate not applicable (**N/A**) if power estimation method (line a) = VA or W.	
l.	Calculate the fraction of rated light output in % if power estimation method (line a) = Dfc or CSfc. ([line k / line c] x 100) ***OR*** Indicate not applicable (**N/A**) if power estimation method (line a) = VA or W.	
m.	Enter the dimmed luminaire fraction of rated power in % if power estimation method (line a) = Dfc or CSfc, and label the control system being tested on the manufacturer's cut sheet or the default graph on page 3. ***OR*** Indicate not applicable (**N/A**) if power estimation method (line a) = VA or W.	
n.	Calculate the system power reduction in %. If power estimation method (line a) = Dfc or CSfc, system power reduction = [1 - dimmed luminaire fraction of rated power (line m)]. ***OR*** If power estimation method (line a) = VA or W, system power reduction = [1 - measured power (line j)/full load power (line d)].	
o.	For areas other than parking garages, the system lighting power reduction of controlled luminaires (line o) is at least 65%. (NA7.6.1.2.1(e)1, §130.1(d)3C) ***OR*** For parking garages, the controlled lighting power consumption is zero. (§130.1(d)3D) Enter yes (**Y**) or no (**N**).	
p.	Dimmed lamps are stable with no discernable flicker. (NA7.6.1.2.1(e)1) Enter yes (**Y**) or no (**N**).	
q.	Only the luminaires in the daylit zones are affected by daylight control. (NA7.6.1.2.1(e)2) Enter yes (**Y**) or no (**N**).	
r.	If a PAF is claimed for daylight dimming plus OFF controls, the system automatically turns off the luminaires that are receiving this credit. (NA7.6.1.2.1(e)3, §140.6(a)2H) Enter yes (**Y**), no (**N**), or not applicable (**N/A**).	
Step 4: Partial daylight test. Simulate or provide daylight conditions where illuminance (fc) from daylight only at the reference location is between 60 and 95% of the reference illuminance measured in Step 2. (NA7.6.1.2.1(f))		
s.	Indicate method used to simulate or provide conditions with partial daylight: light logging (**Log**), partially cover fenestration (**PCF**), open loop setpoint adjustment (**OLSA**).	
t.	Enter the daylight illuminance (light level without electric light) in footcandles (fc) measured at the reference location.	
u.	Calculate the ratio of daylight illuminance to the reference illuminance in %. ([line t / line c] x 100)	

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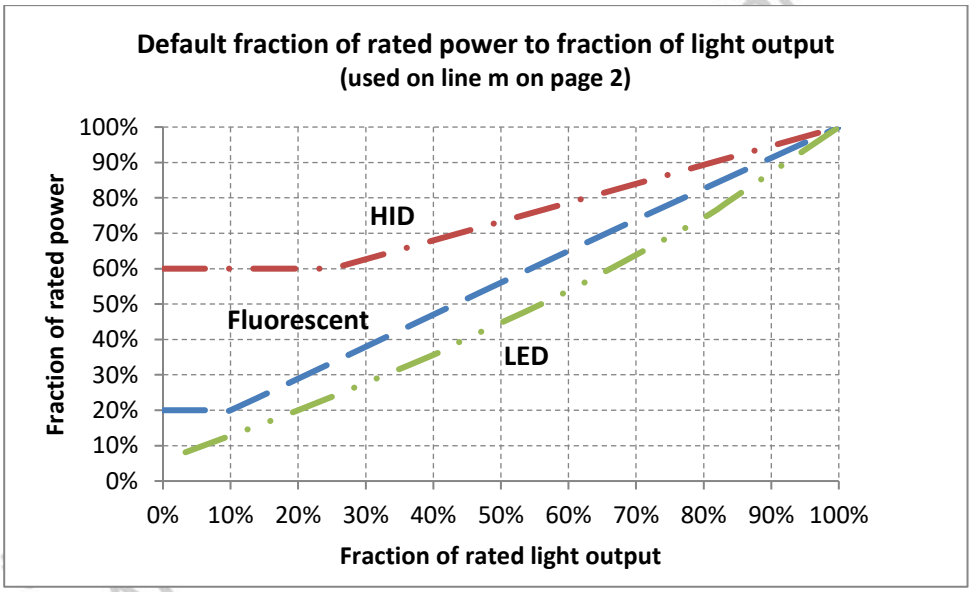
B-1. Continuous Dimming Control Systems Functional Testing (NA7.6.1.2.1)			
Building:	Floor:	Room:	Control:

v.	The ratio of daylight illuminance to the reference illuminance (line u) is between 60 and 95%. (NA7.6.1.2.1(f)) Enter yes (**Y**) or no (**N**).	
w.	Enter the total illuminance (combined daylight and electric light illuminance) in footcandles (fc) measured at the reference location.	
x.	The total illuminance (line w) is greater than or equal to the reference illuminance (line c). (NA7.6.1.2.1(f)1, §130.1(d)3B) Enter yes (**Y**) or no (**N**).	
y.	Calculate the ratio of total illuminance to the reference illuminance in %. ([line w / line c] x 100)	
z.	The ratio of total illuminance to the reference illuminance (line y) is less than or equal to 150%. (NA7.6.1.2.1(f)2) Enter yes (**Y**) or no (**N**).	
aa.	The light output is stable with no discernable flicker. (NA7.6.1.2.1(f)3) Enter yes (**Y**) or no (**N**).	
Functional Testing Compliance: ◯ Complies ◯ Does Not Comply		



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B-2. Stepped Switching or Stepped Dimming Control Systems Functional Testing (NA7.6.1.2.2)			
Building:	Floor:	Room:	Control:

☐	Control is representative of sample. (NA7.6.1.2) If sampling method is used, attach a page listing untested controls in sample.	
Step 1: Identify the reference location (the minimum daylighting location in the controlled zone). (NA7.6.1.2.2(a)) For parking garages, illuminance levels should be measured at the farthest edge of the secondary sidelit zone away from the glazing or opening. (§130.1(d)3D)		
a.	Specify the control type: stepped dimming (**SD**) or stepped switching (**SW**).	
b.	Specify the power estimation method to be used: counting (**C**) – only for stepped switching, cut sheet (**CS**) – ballast cut sheet with steps of power and light must be attached, measured Amps multiplied by Volts (**VA**), or measured watts (**W**).	
Step 2: No daylight test. Simulate or provide conditions without daylight. (NA7.6.1.2.2(b))		
c.	Indicate the method used to simulate or provide conditions without daylight: night time manual measurement (**Night**), night time illuminance logging (**Log**) – attach plot of illuminance or power, cover fenestration (**CF**), or cover photosensor (**CP**).	
d.	Enter the reference illuminance value in footcandles (fc), as measured at the reference location. This is the electric lighting illuminance level without any daylight. (NA7.6.1.2.2(b)4)	
e.	Enter the measured Amps multiplied by Volts in Volt-Amps (VA) if power estimation method (line b) = VA. ***OR*** Enter the measured watts (W) if power estimation method (line b) = W. ***OR*** Indicate not applicable (**N/A**) if power estimation method (line b) = C or CS.	
f.	Automatic daylight control system turns on all stages of controlled lights unless it is documented that multi-level luminaires have been tuned to less than full output and the design illuminance levels are provided. (NA7.6.1.2.2(b)2) Enter yes (**Y**) or no (**N**).	
g.	The stepped dimming control system provides reduced flicker over the entire operating range as specified by §110.9. (NA7.6.1.2.2(b)3) Enter yes (**Y**) or no (**N**). ***OR*** Indicate not applicable (**N/A**) if control type (line a) = SW.	
Step 3: Full daylight test. Simulate or provide bright conditions where the daylight illuminance is greater than 150% of the reference illuminance measured in Step 2. (NA7.6.1.2.2(c), §130.1(d)3C, §130.1(d)3D)		
h.	Enter the daylight illuminance (light level with the electric lighting turned off) value in footcandles (fc) measured at the reference location.	
i.	Calculate the ratio of daylight illuminance to the reference illuminance in %. ([line h / line d] x 100)	
j.	The ratio of daylight illuminance to the reference illuminance (line i) is greater than 150%. (§130.1(d)3C, §130.1(d)3D) Enter yes (**Y**) or no (**N**).	
k.	Enter the measured system power in Volt-Amps (VA) or watts (W) if power estimation method (line b) = VA or W. ***OR*** Indicate not applicable (**N/A**) if power estimation method (line b) = C or CS.	
l.	Enter the fraction of system wattage turned off in % if the power estimation method (line b) = C. ***OR*** Indicate not applicable (**N/A**) if the power estimation method (line b) = CS, VA, or W.	
m.	Enter the power reduction of dimmed lamps calculated from the manufacturer's cut sheet if the power estimation method (line b) = CS. ***OR*** Indicate not applicable (**N/A**) if the power estimation method (line b) = C, VA, or W.	
n.	Calculate the system power reduction in %. If power estimation method (line b) = C, system power reduction = fraction of system wattage turned off (line l). ***OR*** If power estimation method (line b) = CS, system power reduction = power reduction of dimmed lamps (line m). ***OR*** If power estimation method (line b) = VA or W, system power reduction = [1 - measured system power at dimmed stage (line k)/full load system power (line e)].	
o.	For areas other than parking garages, the system lighting power reduction of the controlled luminaires (line n) is least 65%. (NA7.6.1.2.2(c)1, §130.1(d)3C) ***OR*** For parking garages, the controlled lighting power consumption is zero. (§130.1(d)3D) Enter yes (**Y**) or no (**N**).	
p.	Only the luminaires in the daylit zones are affected by daylight control. (NA7.6.1.2.2(c)2) Enter yes (**Y**) or no (**N**).	
q.	If a PAF is claimed for daylight dimming plus OFF controls, the system automatically turns off the luminaires that are receiving this credit. (§140.6(a)2H) Enter yes (**Y**), no (**N**), or not applicable (**N/A**).	
Step 4: Partial daylight test. For each control stage tested in this step, the control stages with lower setpoints than the staged tested are left on and those stages of control with higher setpoints are dimmed or controlled off. Simulate or provide conditions so that each control stage turns on and off or dims. (NA7.6.1.2.2(d))		
r.	Indicate method used to simulate or provide conditions with partial daylight: light logging (**Log**), partially cover fenestration (**PCF**), open loop setpoint adjustment (**OLSA**).	

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B-2. Stepped Switching or Stepped Dimming Control Systems Functional Testing (NA7.6.1.2.2)

Building:	Floor:	Room:	Control:

s.	Enter the number of control steps. If the control has 3 steps of control or less, all steps of control must be tested. If the control has more than 3 steps, testing 3 steps of control is sufficient for showing compliance. (NA7.6.1.2.2)	
First stage of control (partial daylight test)		
t.	Enter the total illuminance (combined daylight and electric light illuminance) in footcandles (fc) measured at the reference location just after the first stage of control dims or shuts off a stage of lighting. (NA7.6.1.2.2(d)1)	
u.	The total illuminance (line t) is greater than or equal to the reference illuminance (line d). (NA7.6.1.2.2(d)1A, §130.1(d)3B) Enter yes (**Y**) or no (**N**).	
v.	Calculate the ratio of total illuminance to the reference illuminance in %. ([line t / line d] x 100)	
w.	The ratio of total illuminance to the reference illuminance (line v) is less than or equal to 150%. (NA7.6.1.2.2(d)1B) Enter yes (**Y**) or no (**N**).	
x.	The control stage does not cycle on and off between dim and undimmed while daylight illuminance remains constant. (NA7.6.1.2.2(d)2) Enter yes (**Y**) or no (**N**).	
y.	Only the luminaires in the daylit zones are affected by daylight control. (NA7.6.1.2.2(d)3) Enter yes (**Y**) or no (**N**).	
Second stage of control (partial daylight test)		
z.	Enter the total illuminance (combined daylight and electric light illuminance) in footcandles (fc) measured at the reference location just after the second stage of control dims or shuts off a stage of lighting. (NA7.6.1.2.2(d)1)	
aa.	The total illuminance (line z) is greater than or equal to the reference illuminance (line d). (NA7.6.1.2.2(d)1A, §130.1(d)3B) Enter yes (**Y**) or no (**N**).	
bb.	Calculate the ratio of total illuminance to the reference illuminance in %. ([line z / line d] x 100)	
cc.	The ratio of total illuminance to the reference illuminance (line bb) is less than or equal to 150%. (NA7.6.1.2.2(d)1B) Enter yes (**Y**) or no (**N**).	
dd.	The control stage does not cycle on and off between dim and undimmed while daylight illuminance remains constant. (NA7.6.1.2.2(d)2) Enter yes (**Y**) or no (**N**).	
ee.	Only the luminaires in the daylit zones are affected by daylight control. (NA7.6.1.2.2(d)3) Enter yes (**Y**) or no (**N**).	
Third stage of control (partial daylight test)		
☐	There are only 2 control stages. (Indicate not applicable (**N/A**) for lines ff through kk.)	
ff.	Enter the total illuminance (combined daylight and electric light illuminance) in footcandles (fc) measured at the reference location just after the third stage of control dims or shuts off a stage of lighting. (NA7.6.1.2.2(d)1)	
gg.	The total illuminance (line ff) is greater than or equal to the reference illuminance (line d). (NA7.6.1.2.2(d)1A, §130.1(d)3B) Enter yes (**Y**) or no (**N**).	
hh.	Calculate the ratio of total illuminance to the reference illuminance in %. ([line ff / line d] x 100)	
ii.	The ratio of total illuminance to the reference illuminance (line hh) is less than or equal to 150%. (NA7.6.1.2.2(d)1B) Enter yes (**Y**) or no (**N**).	
jj.	The control stage does not cycle on and off between dim and undimmed while daylight illuminance remains constant. (NA7.6.1.2.2(d)2) Enter yes (**Y**) or no (**N**).	
kk.	Only the luminaires in the daylit zones are affected by daylight control. (NA7.6.1.2.2(d)3) Enter yes (**Y**) or no (**N**).	
Step 5: Verify time delay. (NA7.6.1.2.2(e))		
ll.	The time delay automatically resets to normal mode within 60 minutes. (NA7.6.1.2.2(e)1, §110.9(b)2A) Enter yes (**Y**) or no (**N**).	
mm.	Set the normal mode time delay to at least 3 minutes. (NA7.6.1.2.2(e)2)	
nn.	There is at least a 3-minute time delay between when illuminance exceeds the setpoint for a given dimming stage and when the control dims or switches off the controlled lights. (NA7.6.1.2.2(e)3) Enter yes (**Y**) or no (**N**).	
Functional Testing Compliance: ◯ Complies ◯ Does Not Comply		

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT	
I certify that this Certificate of Acceptance documentation is accurate and complete.	
Documentation Author Name:	Documentation Author Signature:
Documentation Author Company Name:	Date Signed:
Address:	CEA/ATT Certification Identification (If applicable):
City/State/Zip:	Phone:

FIELD TECHNICIAN'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. The information provided on this Certificate of Acceptance is true and correct.
2. I am the person who performed the acceptance verification reported on this Certificate of Acceptance (Field Technician).
3. The construction or installation identified on this Certificate of Acceptance complies with the applicable acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and signed by the responsible builder/installer and has been posted or made available with the building permit(s) issued for the building.

Field Technician Name:	Field Technician Signature:	
Field Technician Company Name:	Position with Company (Title):	
Address:	ATT Certification Identification (if applicable):	
City/State/Zip:	Phone:	Date Signed:

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

1. I am the Field Technician, or the Field Technician is acting on my behalf as my employee or my agent and I have reviewed the information provided on this Certificate of Acceptance.
2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Acceptance and attest to the declarations in this statement (responsible acceptance person).
3. The information provided on this Certificate of Acceptance substantiates that the construction or installation identified on this Certificate of Acceptance complies with the acceptance requirements indicated in the plans and specifications approved by the enforcement agency, and conforms to the applicable acceptance requirements and procedures specified in Reference Nonresidential Appendix NA7.
4. I have confirmed that the Certificate(s) of Installation for the construction or installation identified on this Certificate of Acceptance has been completed and is posted or made available with the building permit(s) issued for the building.
5. I will ensure that a completed, signed copy of this Certificate of Acceptance shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a signed copy of this Certificate of Acceptance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Person Name:	Responsible Person Signature:	
Responsible Person Company Name:	Position with Company (Title):	
Address:	CSLB License:	
City/State/Zip:	Phone:	Date Signed: